



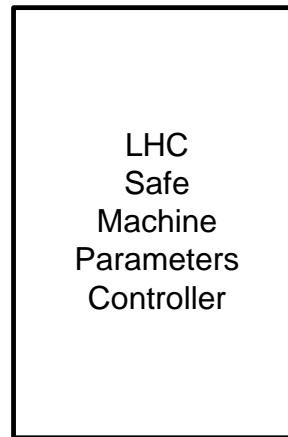
Safe Machine Parameters LHC Energy



SMP Team TE/MPE/MI 12th November 2009

Inputs:

Energy
Intensity Beam-1 (10^8)
Beam Presence Flag 1
Intensity Beam-2 (10^8)
Beam Presence Flag 2
Beam Mode



Serial Outputs (through GMT):

Energy
Intensity Beam-1 (10^{10})
Intensity Beam-2 (10^{10})
Stable Beams Flag
Moveable Devices Flag
Safe Beam Flag 1
Safe Beam Flag 2
(Beam Presence Flag 1)
(Beam Presence Flag 2)

Direct Outputs (to Extraction BIS):



Beam Presence Flag 1
Beam Presence Flag 2
Safe Beam Flag 1
Safe Beam Flag 2

Serial Outputs (through GMT):

Energy failed-safe during dry-run (24th Oct @ 15:18)
- not enough data to be sure why!



Energy

Intensity Beam-1 (10^{10})

Intensity Beam-2 (10^{10})

Stable Beams Flag

Moveable Devices Flag

Safe Beam Flag 1

Safe Beam Flag 2

(Beam Presence Flag 1)

(Beam Presence Flag 2)

Inputs:

Energy

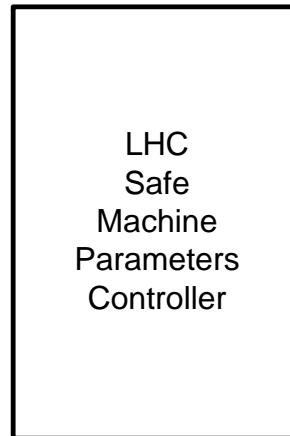
Intensity Beam-1 (10^8)

Beam Presence Flag 1

Intensity Beam-2 (10^8)

Beam Presence Flag 2

Beam Mode



Direct Outputs (to Extraction BIS):

Beam Presence Flag 1

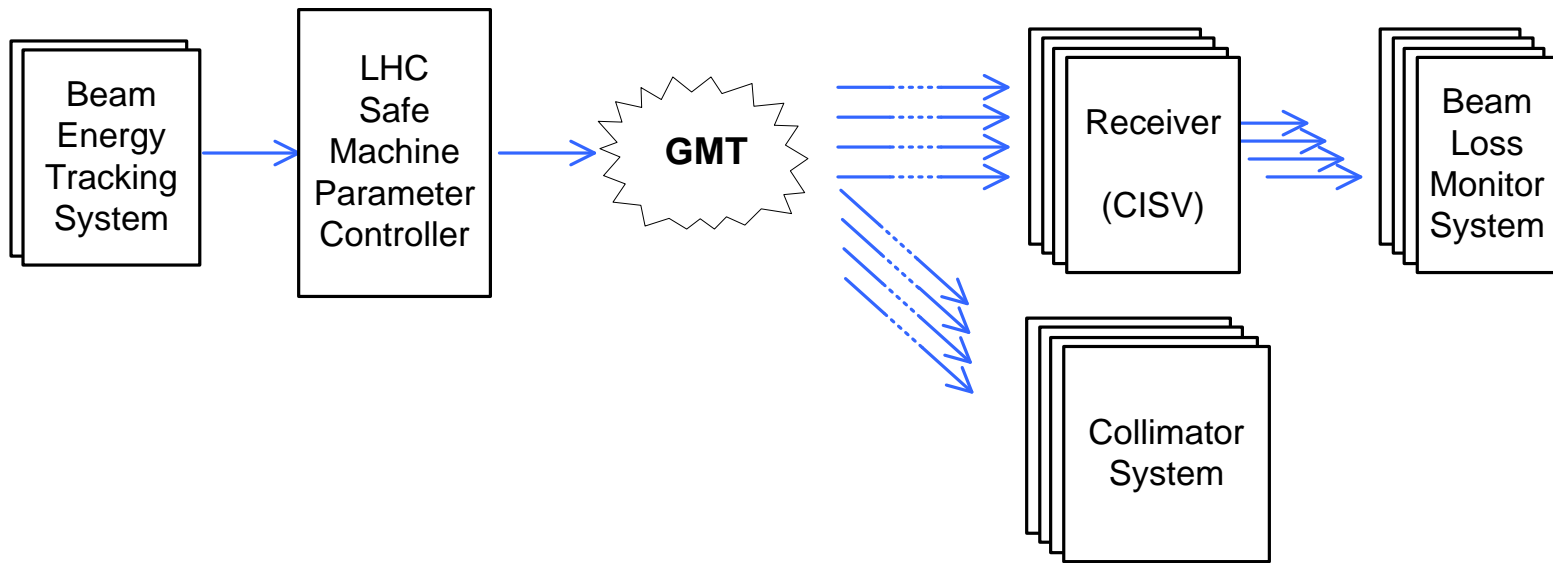
Beam Presence Flag 2

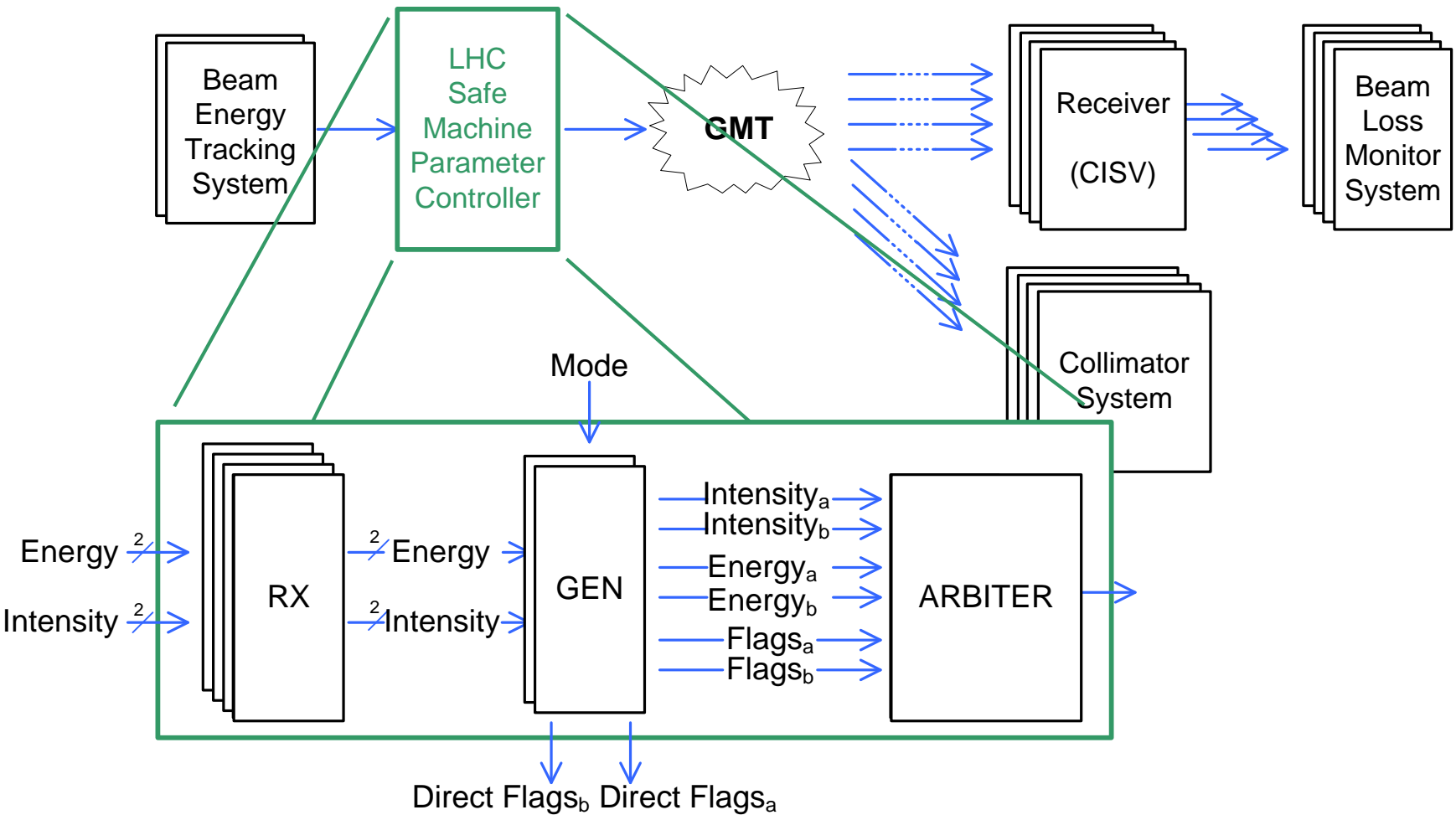
Safe Beam Flag 1

Safe Beam Flag 2

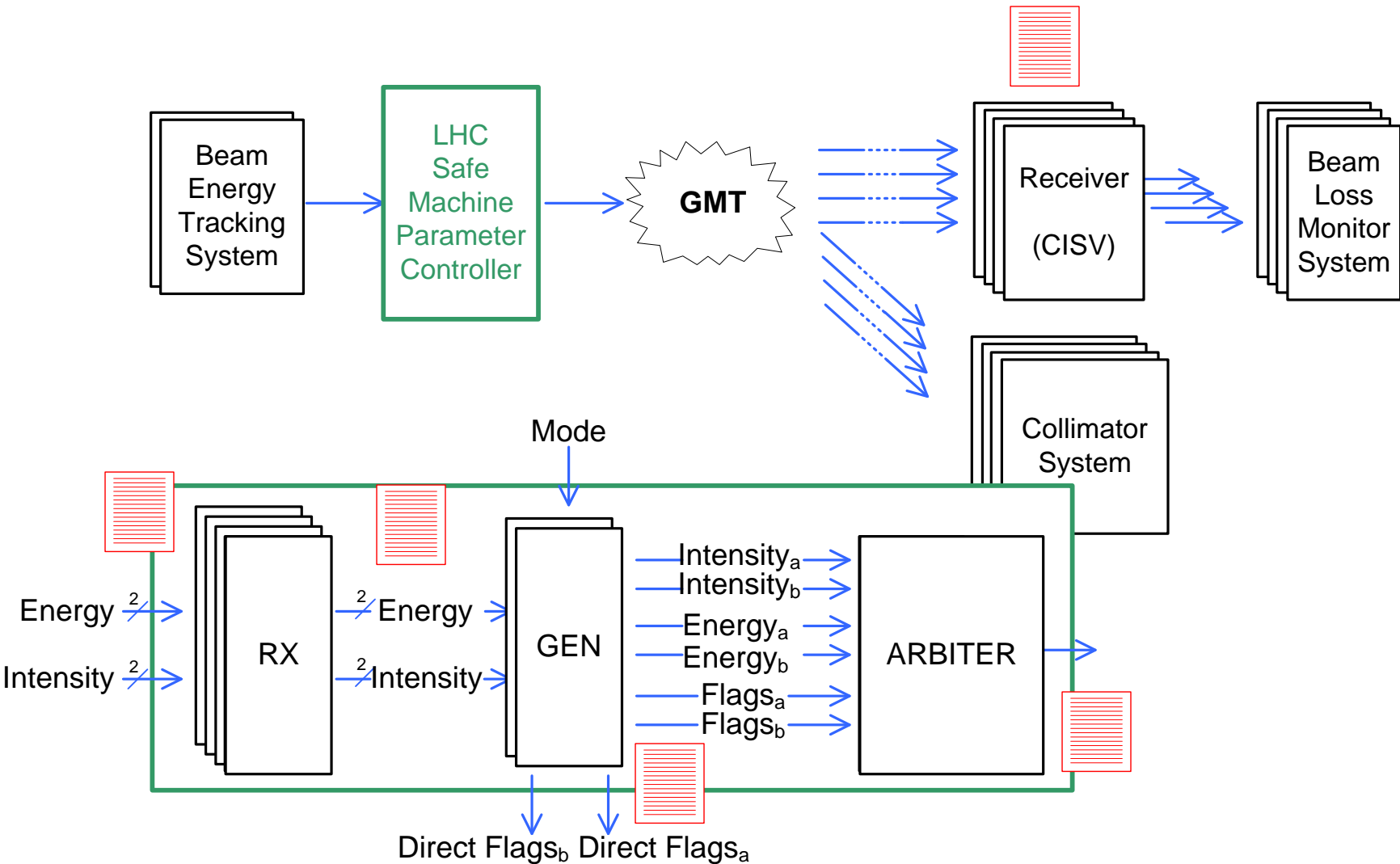


Beam
Energy
Tracking
System





History Buffers in Development



LHC SYSTEM – all requirements for startup OK, but note:

Redundant intensity not accommodated yet (A versus B)

- A versus B “hot swap” not “always on” = changes several cards

Energy failed-safe during dry-run (24th Oct @ 15:18)

- not enough data to be sure why!

ROAD AHEAD – SMP team work in progress:

History Buffers for diagnosis

-VME bandwidth issue

-A vs B Intensity ‘electronic’ switch

Logging

Java history buffer viewer

Java logged data interpreter

Corrections to operator panels

Lots of work = progressively implemented coming weeks